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FLOOD INSURANCE STUDY

ORIGINAL

COMPLETED
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TOWN OF CONSTANTIA, NEW YORK
OSWEGO COUNTY

MAY 3, 1982

Federal Emergency Management Agency

COMMUNITY NUMBER - 360648

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PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index

Flood Insurance Rate Map

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FLOOD INSURANCE STUDY
TOWN OF CONSTANTIA, NEW YORK

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Town of Constantia, Oswego County, New York, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert Constantia to the regular program of flood insurance by the Federal Emergency Management Agency (FEMA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these federally-supported studies are based. These criteria take precedence over the minimum federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 44 CFR, 60.3. In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgements

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by Lockwood, Kessler and Bartlett, Inc. for the Federal Emergency Management Agency, under contract No. H-4741. This work was completed in June 1980.

1.3 Coordination

An initial Consultation and Coordination Officer's (CCO) meeting was held on March 27, 1978 attended by representatives of the Town of Constantia, the FEMA and Lockwood, Kessler and Bartlett, Inc. (the study contractor). Streams requiring detailed study were identified at this meeting.

A legal notice announcing intent to perform the study and stating its objective was later placed in the local newspaper. Contact was made during the course of this study with the following agencies of the State

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of New York: the Department of Commerce, the Department of State, the Community Affairs Library, the Department of Environmental Conservation (Flood Control Section) , the State Library, the Department of Transportation and the Office of Disaster Preparedness.

The following federal agencies were contacted: the Buffalo District of the U. S. Army Corps of Engineers (COE), the Soil Conservation Service (SCS), the U. S. Geological Survey (USGS), the National Oceanic and Atmospheric Administration (NOAA), the U. S. Department of Civil Defense and the Federal Disaster Assistance Administration.

The following miscellaneous agencies were also contacted: the Oswego County Planning Board, the Oswego County Real Estate Property Tax Service, the New York Public Library and representatives of the Town of Constantia.

All contacts were made in an effort to obtain data pertinent to this study. Results of the hydrologic analyses were coordinated with the COE, the SCS, the USGS and the New York State Department of Environmental Conservation (NYSDEC).

On December 8, 1981, the results of the study were reviewed at the final CCO meeting attended by representatives of the study contractor, the FEMA, community officials and interested citizens.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Town of Constantia, Oswego County, New York. Not included in this study is the Village of Cleveland. The area of study is shown on the Vicinity Map (Figure 1).

Frederick Creek from its confluence with Scriba Creek to a point 3,375 feet upstream of Kibbie Lake Road, Scriba Creek from its confluence with Oneida Lake to the upstream corporate limits, Dakins Creek from its confluence with Oneida Lakes to a point 350 feet upstream of Johnson Road and the Oneida and Panther Lake shorelines, within the Town of Constantia were studied by detailed methods. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction for the next five years, through June 1985.

Three Mile Creek, Three Mile Creek Tributary No. 1, Black Creek, Black Creek Tributary Nos. 1 through 3, Sulphur Spring Brook, Crandall Creek and Crandall Creek Tributary Nos. 1 through 4, the West Branch Little

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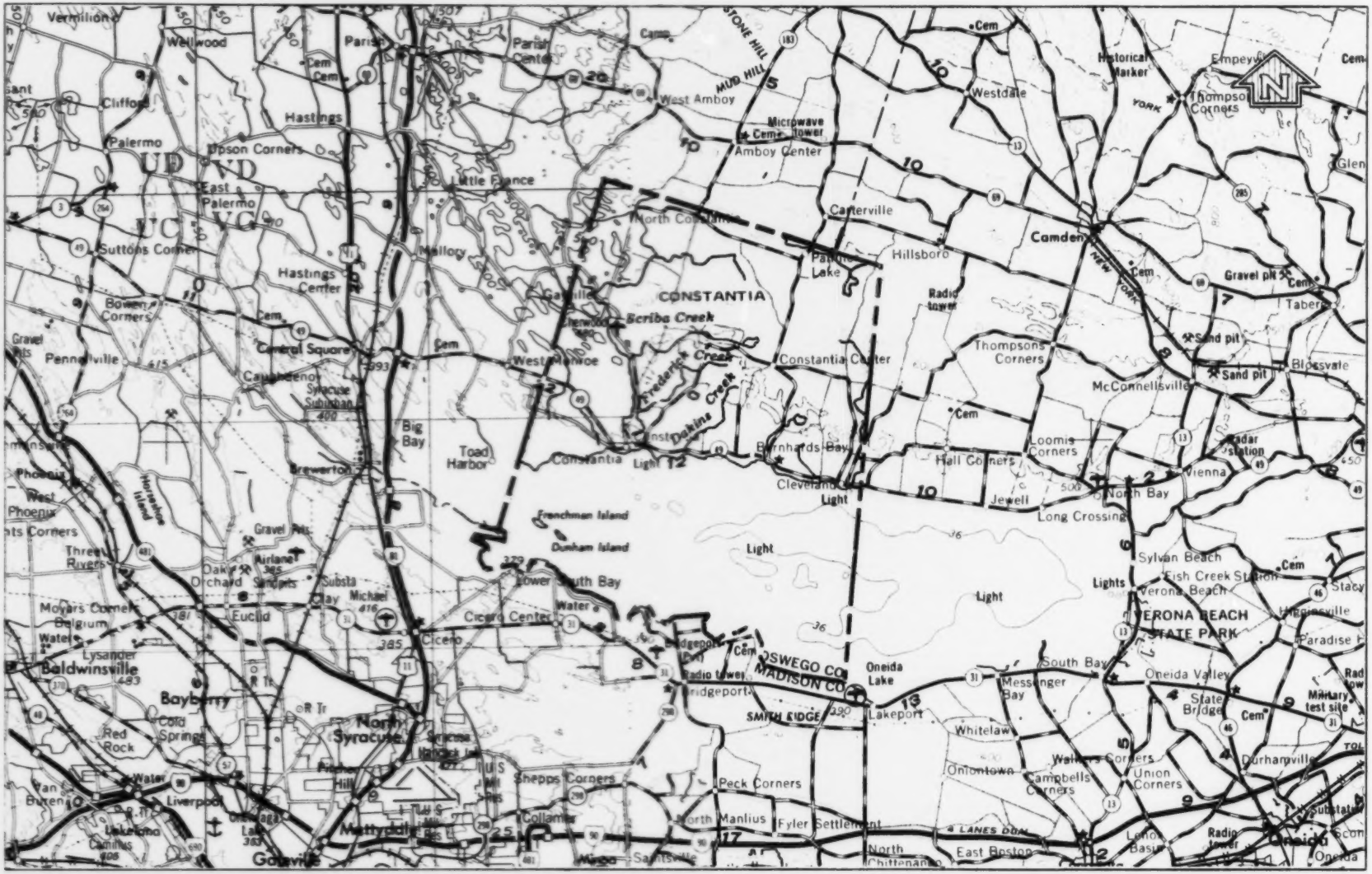

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

APPROXIMATE SCALE

4 0 4 8 12 MILES

VICINITY MAP

River, West Branch Little River Tributary No. 1, Lydiatt Creek, Spring Brook, Spring Brook Tributary Nos. 1 and 2, Tributary Nos. 1 through 9 to Scriba Creek, Potter Creek, Oneida Lake Tributary No. 1, Crandell Creek, Dakins Creek Tributary Nos. 1 through 3, the remainder of Dakins Creek within the Town of Constantia, Cody, Dutcher and Francis Ponds and Kibbie and Vanderkamp Lakes were studied by approximate methods. Approximate methods of analysis were used to study those areas having low development potential and minimal flood hazards as identified at the initiation of the study. The scope and methods of study were proposed to and agreed upon by the FEMA.

2.2 Community Description

The Town of Constantia was founded on April 8, 1808, when it became independent of the Town of Mexico (Reference 1). It is located in the southeastern corner of Oswego County, New York with the Cities of Oswego and Syracuse located approximately 25 miles northwest and 16 miles south, respectively. Constantia is bordered by the Towns of Amboy and Camden on the north, the Town of Vienna on the east, the Towns of Cicero and Sullivan on the south and the Town of West Monroe on the west. The Village of Cleveland is completely surrounded by the Town of Constantia.

In 1970, Constantia had a population of 3,547, an increase of 29.9 percent over its 1960 population of 2,730. With a land area of 57.9 square miles, its population density in 1970 was approximately 61 persons per square mile (Reference 2).

Traditionally, the principal industry in Constantia has been agriculture, particularly grain production. Since the early 1900s, however, agriculture has been on a constant decline, and is today limited to a few dairying operations. As a result, substantial amounts of land formerly used for farming have now reverted back to woodland. Due to Constantia's location within the metropolitan area of the City of Syracuse, a large number of town residents are employed outside the town. In 1970, the manufacturing industry within the region employed 40.5 percent of the town's work force (Reference 3).

The northern section of Constantia is located within the geographical area known as the Tug Hill Plateau, while the southern section of the town is located in the area called the Lake Ontario Plains. Both of these areas lie within the greater geographical area called the Great Lakes Plain, which extends along the full length of the northern and western borders of New York State, connecting Lake Erie, Lake Ontario and the St. Lawrence River (Reference 3). The topographic relief of the Tug Hill Plateau is generally hilly, while the Lake Ontario Plains are more gently rolling. Elevations within Constantia range from a high of 705 feet in the northeast corner of the town, to a low of 369 feet at the Oneida Lake shoreline.

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The Oneida Lake shoreline is the most significant physical feature within Constantia. It is located in the southern portion of the town and drains an area of 1,382 square miles. Other lakes in the town include Panther Lake, Vanderkamp Lake, Kibbie Lake, Dutcher Pond, Cody Pond and Francis Pond (Reference 4).

Frederick Creek has a drainage area of 3.7 square miles, and begins in the center of Constantia. It flows generally southwest to its confluence with Scriba Creek. Scriba Creek, with a drainage area of 43.2 square miles, originates in the Town of Amboy and flows generally south to empty into Oneida Lake. Dakins Creek flows roughly parallel to Frederick Creek to where it empties into Oneida Lake. It drains an area of 3.9 square miles.

In addition to the streams and lakes, Constantia has nearly 4,500 acres of indigenous wetlands, the largest of which is the Spring Brook Survey, covering 1,600 acres. Other large wetlands within the town include Black Creek Swamp, covering 730 acres and Cody Pond Swamp, comprising 691 acres. Wetlands which are partially contained within the town include the Chase Road Swamp and the Toad Harbor Swamp (Reference 5). Much of the Toad Harbor Swamp has been designated in both the Three Mile State Game Management Area and the Three Mile Bay Wetlands.

In the low lying flood plains, development in Constantia is primarily residential. This is evident along Frederick Creek, between the Hatcher Road and Tannery Road bridges, and along the southern section of Scriba Creek. Minimal development is found along Dakins Creek and along the Oneida Lake shoreline between the Three Mile Bay Wetlands and the Village of Cleveland border. Minor development also occurs along the Constantia shoreline of Panther Lake.

The Town of Constantia is subject to what is known as the "lake effect", due to its close proximity to Lake Ontario. Because Lake Ontario is a large body of water, it responds slowly to changes in temperature. When cold air arrives in the winter, the lake waters are still relatively warm, while in early summer the lake remains quite cool. Each winter the lake effect is the cause of many heavy snow squalls. These storms occur when cold winter air moves in over unfrozen sections of Lake Ontario from the west and northwest. The lower layers of this air mass are warmed and absorb water vapors as they pass over the lake, reaching the land in an unstable condition. When the temperature of the land is 10 degrees Fahrenheit (°F) cooler than the lake's, precipitation in the form of snow falls as the moist air mass moves inland. The Town of Constantia experiences this type of storm well into February because much of the lake's surface does not freeze throughout the early winter months. Mean temperatures for Constantia are approximately 23°F for January and approximately 72°F for July. The mean annual precipitation for Constantia is approximately 41 inches and the mean seasonal snowfall is 100 inches (Reference 6).

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The region's climate is classified as humid continental. Prevailing westerly winds blowing across the full length of Lake Ontario affect the temperature in both summer and winter, with the exclusion of periods when the lake's surface is frozen. The lake causes the delay of warm weather in the spring and makes the fall relatively warm. Winters are severe due to a high frequency of storms and cold waves (Reference 6).

2.3 Principal Flood Problems

The most damaging flood ever recorded on Oneida Lake occurred in June 1972 as a result of Tropical Storm Agnes. Peak stages for the Agnes flood were measured at 374.2 at Cleveland, New York, 5.2 feet higher than Oneida Lake's normal pool elevation of 369. Although this stage is lower than a 1936 flood stage recorded at 374.9 feet, damage was considered more severe due to increased development in 1972. Shoreline inundation flooded basements and roads at Doris Park, as the lake's level rose nearly 3 feet in three hours. Minor flooding also occurred along both Frederick and Scriba Creeks. This flood, with regional damages estimated at $1.5 million, had an approximate recurrence interval of 500 years (Reference 7).

Less significant flooding has occurred in the past in the Town of Constantia along Frederick and Scriba Creeks. Shoreline flooding occurred near Bernhard Bay in the early 1930's, and in 1942, the railroad bridge along Three Mile Creek was inundated. Past flooding has also resulted in the failure of mill dams along Scriba Creek. With the removal of these dams, conditions which might precipitate similar recurrences no longer exist.

In the spring, flooding occurs regularly at the Cemetery Drive bridge along Scriba Creek, at Doris Park, and along the Lake Ontario shoreline, due to spring meltwater runoff. Figure 2 shows the potential 100-year flood level for Scriba Creek at the upstream face of the Cemetery Drive bridge. Problem flooding along Frederick Creek and the Constantia side of Panther Lake is minimal. No past flooding problems have been associated with Dakins Creek.

2.4 Flood Protection Measures

In accordance with the town's current participation in the Federal Emergency Management Agency's Emergency Program, the Town of Constantia Town Board has enacted a flood plain management ordinance. In addition, seawalls have been constructed along Oneida Lake's riparian property. No other flood plain management measures or regulations currently exist within the town.

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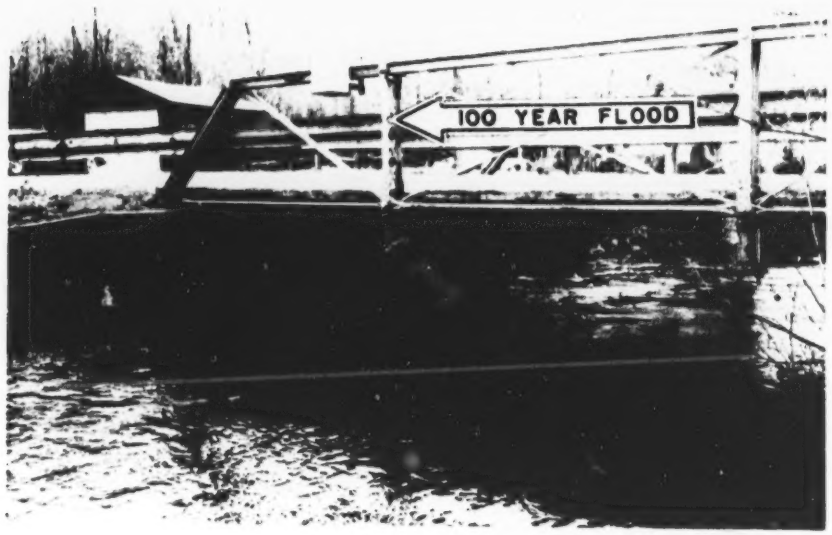

Figure 2 - The potential 100-year flood level at the upstream face of the Cemetery Drive bridge over Scriba Creek.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one-percent chance of annual occurrence) in any 50-year period is about 40 percent (four in ten) and, for any 90-year period, the risk increases to about

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60 percent (six in ten). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency and peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail affecting the community.

The peak discharges for Frederick Creek were developed using the methodology presented by the Federal Highway Administration, and checked by the Bureau of Public Road's method (References 8 and 9).

The peak discharge-frequency relationships for Scriba Creek were determined by a statistical analysis of the discharge records of USGS gaging station No. 04245840 located at Constantia, New York. The analysis was performed for 10 years of record, 1966-1977, using the standard log-Pearson Type III method as outlined by the Water Resources Council (Reference 10). The peak discharges were then transferred to the various locations along Scriba Creek using the equation $Q_u = Q_g (A_u/A_g)^a$, where Q_u and Q_g are the discharges at the desired ungaged site and gaged site respectively, A_u and A_g are the corresponding drainage areas and a is a transfer coefficient. A value of 0.74 was used for a, based on USGS water-supply paper 1677 (Reference 11).

The peak discharges for Dakins Creek were developed using the Federal Highway Administration methodology and checked by comparison with flows transferred from the East Branch of Fish Creek at Taberg, New York, a similar gaged stream nearby (Reference 8).

A summary of drainage area-peak discharge relationships for each stream studied in detail is shown in Table 1, "Summary of Discharges".

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
FREDERICK CREEK					
At confluence of Scriba Creek	3.7	325	543	632	780
SCRIBA CREEK					
At confluence with Oneida Lake	43.15	1,268	1,681	1,860	2,288

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TABLE 1 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
SCRIBA CREEK (continued)					
At confluence of Frederick Creek	39.4	1,186	1,573	1,740	2,141
At confluence of Spring Brook	31.8	1,011	1,341	1,483	1,825
At confluence of Potter's Creek	21.4	756	1,002	1,108	1,364
At confluence of Crandall Creek	10.0	430	571	631	777
DAKIN CREEK					
At mouth	3.9	410	689	803	1,050
At confluence of Dakin Creek Tributary No. 1	3.0	340	569	663	900

Analyses of elevations of Oneida Lake were determined through application of the log-Pearson Type III statistical analysis of 27 years of record at the Brewerton, New York gage (No. 04246000) (Reference 12).

Flood elevations for Panther Lake were determined by the study contractor. Inflow hydrographs for the 10-, 50-, 100- and 500-year floods were developed using the synthetic unit hydrograph methodology of the SCS (Reference 13). These inflow hydrographs were then reservoir-routed through Panther Lake using a computer program developed by the study contractor, to determine the peak-elevation frequency relationships (Reference 14). Stage-storage data for this analysis was developed from topographic maps prepared from aerial photography at a scale of 1:4,800, with a contour interval of 5 feet (Reference 15).

A summary of peak elevation-frequency relationships for the detailed study portions of the Oneida and Panther Lakes is shown in Table 2, "Summary of Elevations".

TABLE 2 - SUMMARY OF ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (feet) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
ONEIDA LAKE				
Entire shoreline in community	371.8	372.8	373.2	374.2
PANTHER LAKE				
Entire shoreline in community	600.6	600.8	600.9	601.3

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The storm surge elevations for the 10-, 50-, 100-, and 500-year floods have been determined for Oneida and Panther Lakes. The analyses reported herein reflect the still water elevations due to tidal and wind set up effects, but do not include the contributions from wave action effects such as the wave crest height and wave runup. Nonetheless, this additional hazard due to wave action effects should be considered in the planning of future development.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of these flooding sources.

Cross sections for the backwater analyses of Frederick Creek, Scriba Creek and Dakins Creek were obtained by photogrammetric methods; the below-water sections were obtained by field measurement (Reference 16). All bridges, dams and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals above and below bridges and culverts in order to compute the significant backwater effects of these structures.

Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen based on engineering judgement and field observations of the channel and overbank areas. Roughness values for the main channel of Frederick Creek ranged from 0.03 to 0.10 and the overbank values ranged from 0.05 to 0.15. For the main channel of Scriba Creek, roughness values ranged from 0.03 to 0.10 and the overbank values ranged from 0.06 to 0.20. For Dakins Creek, main channel roughness values ranged from 0.018 to 0.085 and the overbank values ranged from 0.075 to 0.25. The acceptability of all assumed hydraulic factors, cross sections and hydraulic structure data was checked by computations that duplicated the surveyed water-surface profile and various reported high-water elevations.

Water-surface elevations for floods of the selected recurrence intervals were computed through the use of the COE HEC-2 step-backwater computer program (Reference 17). Starting water-surface elevations for Scriba Creek and Dakins Creek were calculated by the slope/area method. Starting water-surface elevations for Frederick Creek were derived from the final water-surface elevation of Scriba Creek at the confluence of Frederick Creek.

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Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross-section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 3).

All elevations used in this study are referenced to the National Geodetic Vertical Datum of 1929 (NGVD), formerly referred to as Sea Level Datum of 1929. Locations of the elevation reference marks used in the study are shown on the maps.

The hydraulic analyses for this study are based on the effects of unobstructed flow. The flood elevations shown on the profiles are valid only if hydraulic structures remain unobstructed and do not fail.

Flood elevations for the riverine sources studied by approximate methods were determined using Federal Highway Administration methodologies (Reference 8). Flood depths were then computed by normal slope/area methods, using Manning's equation, and by culvert and bridge flow capacity analyses at crossings. For Dutcher Pond, Vanderkamp Lake and Francis Pond, flood depths were computed using a reservoir-routing analysis. Inflow hydrographs, developed using the synthetic unit hydrograph methodology of the SCS, were reservoir-routed through their respective flooding source using a computer program developed by the study contractor (References 13 and 14).

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the FEMA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:4,800 with a contour interval of 5 feet (Reference 15). In cases where the 100- and 500-year flood boundaries are close together, only the 100-year boundary has been shown.

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Flood boundaries for the approximate studied areas were plotted on USGS topographic maps (Reference 18). Flood boundaries were further verified by examination of aerial photographs and field inspection (Reference 16).

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 3). Small areas within the flood boundaries may lie above the flood elevations and, therefore, may not be subject to flooding. Owing to limitations of the map scale and lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood can be carried without substantial increases in flood heights. Minimum standards of the FEMA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plains. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 3).

As shown on the Flood Boundary and Floodway Map (Exhibit 3), the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 3.

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Frederick Creek								
A	80	43	183	3.4	375.6	375.6	376.3	0.7
B	190	30	229	2.7	378.3	378.3	379.2	0.9
C	280	125	483	1.3	378.5	378.5	379.3	0.8
D	580	130	777	0.8	378.6	378.6	379.4	0.8
E	740	110	366	1.7	378.6	378.6	379.4	0.8
F	1,250	40	184	3.4	381.4	381.4	381.4	0.0
G	1,735	31	120	5.2	382.8	382.8	383.3	0.5
H	2,350	37	132	4.7	390.1	390.1	390.2	0.1
I	2,770	24	103	6.0	394.4	394.4	395.4	1.0
J	3,325	46	229	2.7	400.9	400.9	401.6	0.7
K	3,625	53	152	4.1	405.6	405.6	405.7	0.1
L	3,805	128	1,111	0.5	415.0	415.0	415.7	0.7
M	5,475	60	223	2.8	415.0	415.0	415.6	0.6
N	6,015	160	620	1.0	416.0	416.0	416.9	0.9
O	6,495	225	632	0.9	416.6	416.6	417.6	1.0
P	7,205	95	364	1.7	418.5	418.5	419.3	0.8
Q	7,815	40	177	3.5	420.8	420.8	421.4	0.6
R	8,060	150	715	0.8	422.3	422.3	423.0	0.7

[1]Feet above confluence with Scriba Creek

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

FREDERICK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Frederick Creek (continued)								
S	8,390	488	1,702	0.3	422.4	422.4	423.2	0.8
T	8,965	255	828	0.7	423.0	423.0	423.6	0.6
U	9,170	255	828	0.7	423.0	423.0	423.6	0.6
V	9,875	39	106	5.9	424.5	424.5	425.2	0.7
W	9,940	30	174	3.6	426.5	426.5	427.0	0.5
X	10,060	55	655	0.9	434.8	434.8	435.2	0.4
Y	10,455	80	821	0.7	434.9	434.9	435.3	0.4
Z	10,855	90	844	0.7	434.9	434.9	435.4	0.5
AA	11,335	95	783	0.8	434.9	434.9	435.4	0.5
AB	11,635	90	538	1.1	434.9	434.9	435.5	0.6
AC	12,020	120	788	0.8	435.0	435.0	435.7	0.7
AD	12,420	120	698	0.9	435.0	435.0	435.8	0.8
AE	12,870	120	538	1.1	435.2	435.2	436.2	1.0
AF	13,370	113	528	1.1	435.8	435.8	436.7	0.9
AG	13,555	60	266	2.3	436.0	436.0	436.9	0.9
AH	13,920	31	110	5.7	439.7	439.7	439.9	0.2
AI	14,100	55	167	3.7	442.3	442.3	443.2	0.9

[1]Feet above confluence with Scriba Creek

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

FREDERICK CREEK

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Frederick Creek (continued)								
AJ	14,370	80	362	1.7	443.9	443.9	444.7	0.8
AK	15,090	25	116	5.4	448.3	448.3	448.6	0.3
AL	15,375	40	186	3.3	452.5	452.5	453.4	0.9
AM	15,865	70	206	3.0	459.2	459.2	460.1	0.9
AN	16,390	165	566	1.1	461.3	461.3	462.2	0.9
AO	17,160	165	573	1.1	462.5	462.5	463.5	1.0
AP	17,940	40	191	3.2	464.4	464.4	465.2	0.8
AQ	18,440	87	411	1.5	467.2	467.2	468.1	0.9
AR	18,690	70	348	1.8	467.3	467.3	468.2	0.9
AS	18,780	90	895	0.7	470.1	470.1	470.6	0.5
AT	18,970	160	1,140	0.5	470.1	470.1	470.6	0.5
AU	19,210	105	575	1.0	470.1	470.1	470.6	0.5
AV	19,540	100	414	1.5	470.4	470.4	470.8	0.4
AW	19,840	55	209	3.0	471.0	471.0	471.4	0.4
AX	20,060	65	322	1.9	472.9	472.9	473.3	0.4
AY	20,515	62	267	2.3	473.6	473.6	473.9	0.3
AZ	20,660	125	587	1.0	473.7	473.7	474.0	0.3

[1]Feet above confluence with Scriba Creek

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

FREDERICK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Frederick Creek (continued)								
BA	21,000[1]	195	978	0.6	473.7	473.7	474.0	0.3
BB	21,795[1]	300	1,147	0.5	473.7	473.7	474.0	0.3
BC	23,130[1]	625	985	0.6	474.0	474.0	474.8	0.8
BD	24,240[1]	375	1,387	0.4	474.8	474.8	475.3	0.5
BE	24,605[1]	520	2,485	0.2	475.5	475.5	476.4	0.9
BF	25,105[1]	350	1,678	0.3	475.5	475.5	476.4	0.9
BG	25,570[1]	340	1,258	0.5	475.6	475.6	476.5	0.9
BH	26,085[1]	350	1,206	0.5	475.8	475.8	476.7	0.9
BI	26,735[1]	335	701	0.9	476.5	476.5	477.2	0.7
BJ	27,945[1]	500	1,241	0.5	477.2	477.2	478.1	0.9
Scriba Creek								
A	165[2]	48	231	8.0	373.2	369.5[3]	369.5	0.0
B	490[2]	50	261	7.1	373.2	370.6[3]	370.7	0.1
C	795[2]	65	342	5.4	373.2	371.6[3]	371.6	0.0
D	955[2]	54	225	8.2	373.2	371.5[3]	371.6	0.1
E	1,260[2]	37	199	8.7	374.6	374.6	374.7	0.1

[1]Feet above confluence with Scriba Creek

[2]Feet above confluence with Oneida Lake

[3]Elevations computed without consideration of backwater effects from Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

FREDERICK CREEK AND SCRIBA CREEK

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Scriba Creek (continued)								
F	1,925	54	452	3.8	382.4	382.4	383.0	0.6
G	2,075	39	322	5.4	382.9	382.9	383.3	0.4
H	2,370	97	603	2.8	384.7	384.7	385.4	0.7
I	2,525	99	570	3.0	389.0	389.0	389.0	0.0
J	2,865	225	845	2.0	389.2	389.2	389.2	0.0
K	3,455	276	921	1.8	389.5	389.5	390.3	0.8
L	4,070	185	614	2.8	392.5	392.5	393.2	0.7
M	4,705	110	691	2.5	400.6	400.6	401.4	0.8
N	4,815	160	1,257	1.3	401.0	401.0	401.7	0.7
O	5,890	138	499	3.4	404.1	404.1	404.4	0.3
P	7,030	119	722	2.4	409.0	409.0	409.7	0.7
Q	7,195	210	1,117	1.5	409.4	409.4	410.1	0.7
R	7,735	95	697	2.4	412.5	412.5	413.1	0.6
S	8,725	250	928	1.8	414.2	414.2	415.2	1.0
T	9,335	280	1,531	1.1	415.0	415.0	416.0	1.0
U	10,225	335	1,881	0.9	415.6	415.6	416.6	1.0
V	10,840	450	2,014	0.8	415.9	415.9	416.9	1.0
W	11,690	330	1,389	1.2	416.6	416.6	417.6	1.0

[1]Feet above confluence with Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

SCRIBA CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Scriba Creek (continued)								
X	12,730	100	652	2.6	418.5	418.5	419.4	0.9
Y	13,590	200	1,405	1.2	419.8	419.8	420.7	0.9
Z	13,815	375	2,030	0.8	419.9	419.9	420.9	1.0
AA	14,780	350	848	1.7	420.3	420.3	421.3	1.0
AB	15,825	50	260	5.6	427.2	427.2	427.2	0.0
AC	16,850	80	462	3.2	432.3	432.3	433.2	0.9
AD	17,095	120	537	2.7	433.8	433.8	434.3	0.5
AE	18,175	65	259	5.7	440.8	440.8	440.9	0.1
AF	19,030	340	1,419	1.0	442.5	442.5	443.3	0.8
AG	19,200	48	400	3.6	442.5	442.5	443.4	0.9
AH	20,685	320	1,298	1.1	445.1	445.1	446.0	0.9
AI	20,985	220	949	1.5	445.4	445.4	446.2	0.8
AJ	21,165	82	556	2.6	445.6	445.6	446.4	0.8
AK	21,425	88	593	2.4	446.0	446.0	446.8	0.8
AL	21,505	61	505	2.9	448.3	448.3	448.4	0.1
AM	22,145	40	353	4.1	449.0	449.0	449.5	0.5
AN	23,430	410	2,532	0.5	450.2	450.2	451.2	1.0
AO	24,550	110	921	1.6	451.5	451.5	452.2	0.7

[1]Feet above confluence with Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

SCRIBA CREEK

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Scriba Creek (continued)								
AP	25,100	110	1,032	1.4	452.6	452.6	453.1	0.5
AQ	25,770	120	1,136	1.3	453.4	453.4	454.0	0.6
AR	26,005	210	2,002	0.7	453.7	453.7	454.4	0.7
AS	27,030	180	1,350	1.0	454.6	454.6	455.3	0.7
AT	27,730	350	2,716	0.5	455.4	455.4	456.1	0.7
AU	28,485	55	663	2.2	456.3	456.3	456.9	0.6
AV	29,545	45	544	2.7	457.3	457.3	457.9	0.6
AW	29,810	45	567	2.6	457.6	457.6	458.2	0.6
AX	30,485	30	379	3.9	457.6	457.6	458.2	0.6
AY	30,715	50	552	2.6	458.0	458.0	458.6	0.6
AZ	31,460	55	537	2.7	459.0	459.0	459.4	0.4
BA	31,910	40	419	3.5	459.6	459.6	459.9	0.3
BB	32,675	45	488	3.0	460.6	460.6	460.9	0.3
BC	33,755	40	473	3.1	461.7	461.7	462.1	0.4
BD	34,140	100	932	1.5	462.0	462.0	462.5	0.5
BE	34,435	100	859	1.7	462.0	462.0	462.6	0.6
BF	34,875	80	532	2.0	462.2	462.2	463.0	0.8
BG	35,020	100	645	1.7	462.5	462.5	463.2	0.7

[1]Feet above confluence with Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

SCRIBA CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Scriba Creek (continued)								
BH	35,235	120	7,709	1.4	463.7	463.7	464.2	0.5
BI	35,685	129	754	1.4	463.9	463.9	464.4	0.5
BJ	35,950	140	934	1.1	464.1	464.1	464.6	0.5
BK	36,455	120	724	1.5	464.4	464.4	464.9	0.5
BL	37,310	420	2,116	0.5	464.6	464.6	465.2	0.6
BM	37,955	200	920	1.2	464.7	464.7	465.3	0.6
BN	38,400	225	1,011	1.0	464.9	464.9	465.5	0.6
BO	38,580	130	753	1.4	465.3	465.3	465.9	0.6
BP	39,030	205	1,165	0.9	465.4	465.4	466.0	0.6
BQ	39,730	250	1,222	0.9	465.5	465.5	466.3	0.8
BR	40,210	420	2,027	0.5	465.6	465.6	466.5	0.9
BS	40,680	475	1,088	1.0	465.8	465.8	466.7	0.9
BT	41,015	81	414	2.6	466.6	466.6	467.3	0.7
BU	41,620	66	379	2.9	468.6	468.6	469.3	0.7
BV	41,995	57	218	5.0	471.0	471.0	471.5	0.5
BW	42,840	43	275	4.0	478.5	478.5	479.3	0.8
BX	43,270	280	1,586	0.6	479.0	479.0	480.0	1.0
BY	43,790	575	2,516	0.4	479.2	479.2	480.2	1.0

[1]Feet above confluence with Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

SCRIBA CREEK

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Scriba Creek (continued)								
BZ	44,070	550	2,332	0.4	479.2	479.2	480.2	1.0
CA	44,890	305	1,172	0.9	479.6	479.6	480.5	0.9
CB	45,515	80	320	3.4	481.2	481.2	481.8	0.6
CC	45,960	95	405	2.7	483.7	483.7	484.4	0.7
CD	47,025	36	189	5.8	491.4	491.4	491.6	0.2
CE	47,530	41	229	4.8	497.3	497.3	498.2	0.9
CF	48,205	60	329	3.3	502.4	502.4	503.2	0.8
CG	48,355	38	289	3.8	505.2	505.2	505.8	0.6
CH	48,775	58	336	3.2	506.8	506.8	507.8	1.0
CI	49,135	35	177	6.2	509.6	509.6	510.4	0.8
CJ	49,390	85	535	1.1	510.1	510.1	511.1	1.0
CK	50,160	35	223	2.8	511.2	511.2	512.1	0.9
CL	51,285	38	174	3.6	515.8	515.8	516.7	0.9
CM	52,655	63	337	1.8	520.2	520.2	521.2	1.0
CN	53,580	800	3,023	0.2	520.4	520.4	521.4	1.0
CO	54,150	222	1,005	0.6	520.5	520.5	521.5	1.0
CP	54,695	34	74	8.4	522.1	522.1	522.1	0.0
CQ	55,165	320	829	0.7	523.8	523.8	524.8	1.0

[1]Feet above confluence with Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

SCRIBA CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Scriba Creek (continued)								
CR	55,910	220	681	0.9	524.9	524.9	525.9	1.0
CS	56,290	275	775	0.8	525.8	525.8	526.7	0.9
CT	56,640	141	429	1.4	526.7	526.7	527.6	0.9
CU	57,140	163	569	1.1	528.1	528.1	529.1	1.0
CV	57,530	38	133	4.7	529.9	529.9	530.6	0.7
CW	57,930	35	127	4.9	533.5	533.5	534.0	0.5
CX	58,095	25	134	4.6	536.9	536.9	537.4	0.5
CY	58,705	90	369	1.7	538.3	538.3	539.3	1.0
CZ	59,070	90	3,912	1.6	539.4	539.4	540.1	0.7
DA	59,370	32	112	5.6	541.0	541.0	541.6	0.6
DB	59,875	55	316	1.9	543.2	543.2	544.1	0.9
DC	60,350	50	267	2.3	544.2	544.2	545.1	0.9
DD	60,985	180	783	0.8	545.0	545.0	546.0	1.0
DE	61,840	370	1,114	0.5	545.6	545.6	546.6	1.0
DF	62,335	250	911	0.6	545.9	545.9	546.9	1.0
DG	63,215	250	818	0.7	546.6	546.6	547.5	0.9

[1]Feet above confluence with Oneida Lake

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

SCRIBA CREEK

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Dakins Creek								
A	110	151	446	1.7	373.2	373.2	373.2	0.0
B	260	55	372	2.1	377.0	377.0	377.2	0.2
C	505	213	961	0.6	379.0	379.0	379.0	0.0
D	1,105	48	231	2.8	379.1	379.1	379.2	0.1
E	1,270	105	438	1.5	383.1	383.1	383.1	0.0
F	1,690	62	245	2.7	383.3	383.3	383.4	0.1
G	2,260	45	138	4.7	383.9	383.9	384.1	0.2
H	2,440	44	149	4.4	384.8	384.8	384.8	0.0
I	2,575	44	184	3.5	385.6	385.6	385.6	0.0
J	3,185	41	154	4.2	387.4	387.4	387.7	0.3
K	3,900	40	123	5.3	391.9	391.9	392.1	0.2
L	4,430	46	84	7.8	399.3	399.3	399.3	0.0
M	5,020	48	229	2.8	406.5	406.5	406.6	0.1
N	5,365	186	1,178	0.5	413.6	413.6	413.6	0.0
O	5,458	249	1,425	0.4	413.6	413.6	413.6	0.0

[1]Feet above confluence with Oneida Lake

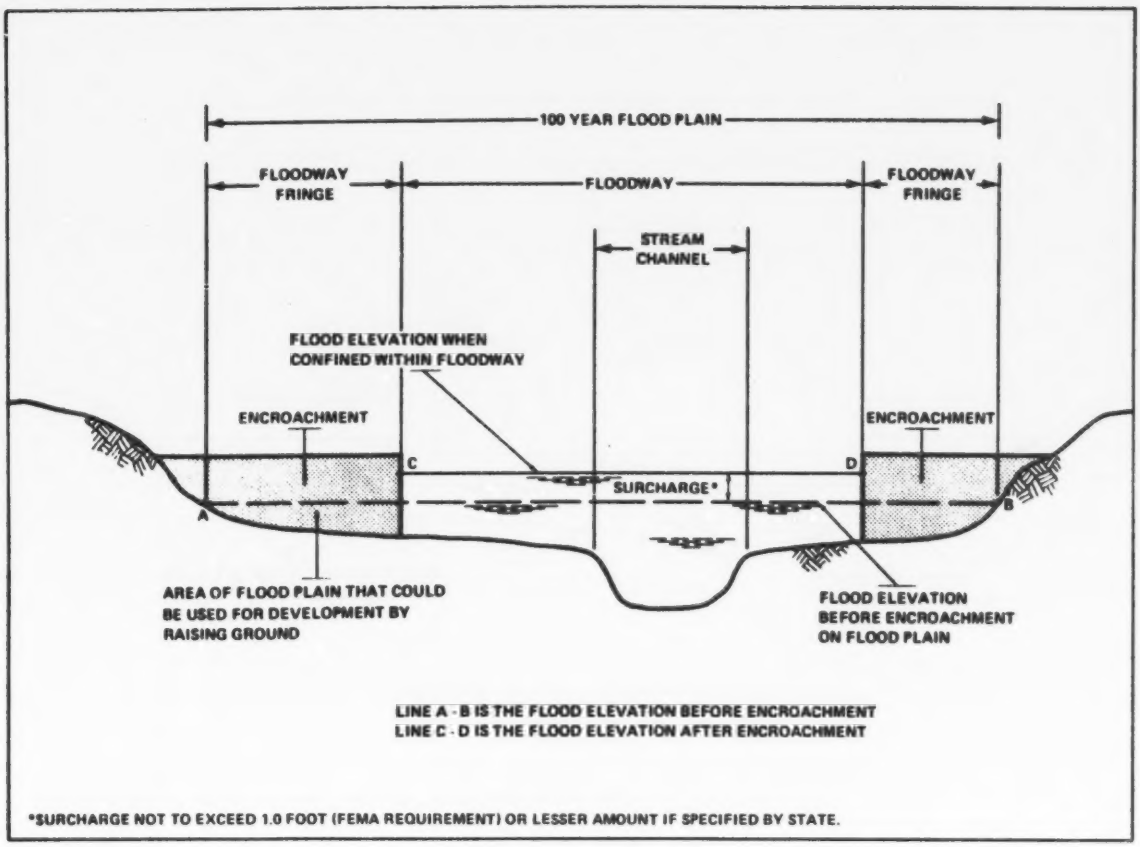
TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOODWAY DATA

DAKINS CREEK


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FLOODWAY SCHEMATIC Figure 3

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "With Floodway" elevations presented in Table 3 for certain downstream cross sections of Scriba Creek are lower than the regulatory flood elevations in that area, which must take into account the 100-year flooding due to backwater from other sources.

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the FEMA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHFs), and flood insurance zone designations for each flooding source affecting the Town of Constantia.

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5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

Average Difference Between 10- and 100-Year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the flooding sources of the Town of Constantia are shown on the Flood Profiles (Exhibit 1) and are summarized in the Flood Insurance Zone Data Table (Table 4).

In lacustrine areas, reaches are limited to the distance for which the difference between the 10- and 100-year flood elevations does not vary more than 1.0 foot. Using these criteria, the Oneida Lake and Panther Lake shorelines each qualify as one reach. The locations of these reaches are shown on the Flood Insurance Rate Map.

5.2 Flood Hazard Factors

The FHF is the FEMA device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest 0.5 foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire incorporated area of the Town of Constantia was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

BEST DOCUMENT AVAILABLE

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Oneida Lake							
Reach 1	15,20						
	25,30	-1.4	-0.4	+1.0	015	A3	373
Panther Lake							
Reach 1	05,10	-0.3	-0.1	+0.4	005	A1	601
Frederick Creek							
Reach 1	15	-0.9	-0.3	+0.3	010	A2	Varies
Reach 2	15	-0.6	-0.2	+0.2	005	A1	Varies
Reach 3	15	-1.1	-0.2	+0.4	010	A2	Varies
Reach 4	15	-3.8	-0.2	+0.4	040	A8	Varies
Reach 5	05,15	-1.0	-0.3	+0.3	010	A2	Varies
Reach 6	05	-0.7	-0.2	+0.3	005	A1	Varies
Scriba Creek							
Reach 1	05,15	-1.1	-0.3	+0.7	010	A2	Varies
Reach 2	05	-2.2	-0.6	+1.4	020	A4	Varies
Reach 3	05	-1.5	-0.5	+1.1	015	A3	Varies

[1]Flood Insurance Rate Map Panel
[2]Weighted Average
[3]Rounded to the nearest foot - see map

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOOD INSURANCE ZONE DATA

ONEIDA LAKE, PANTHER LAKE,
FREDERICK CREEK AND SCRIBA CREEK

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FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Scriba Creek (Continued)							
Reach 4	05	-0.9	-0.2	+0.5	010	A2	Varies
Reach 5	05	-0.6	-0.2	+0.4	005	A1	Varies
Dakins Creek							
Reach 1	15	-2.0	-0.5	+0.8	020	A4	Varies

[1]Flood Insurance Rate Map Panel
[2]Weighted Average
[3]Rounded to the nearest foot - see map

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

FLOOD INSURANCE ZONE DATA

SCRIBA CREEK AND DAKINS CREEK

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or FHFs determined.
Zones A1, A2, A3 A4 and A8:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to FHF.
Zone B:	Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also, areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

Table 4, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevations for the flooding sources studied in detail in the Town of Constantia.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the Town of Constantia is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the FEMA.

6.0 OTHER STUDIES

Flood Insurance Studies are currently being prepared for the adjacent Towns of West Monroe and Vienna and the Village of Cleveland (References 19, 20 and 21). Flood Insurance Studies are also being prepared for the nearby towns of Schroppel, Hastings and Cicero and for the City of Rome (References 22, 23, 24 and 25). A Flood Insurance Study for the nearby Town of Clay has already been published (Reference 26). The results of the study for Constantia will be in exact agreement with all of these studies.

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This study is authoritative for purposes of the Flood Insurance Program, and the data presented here either supersede or are compatible with previous determinations.

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the office of the Insurance and Mitigation Division of the Federal Emergency Management Agency, Regional Director, Region II Office, 26 Federal Plaza, Room 19-100, New York, New York 10278.

8.0 BIBLIOGRAPHY AND REFERENCES

1. Town and Village Planning Board, The Master Plan, Town of Constantia, New York; Village of Cleveland, New York, Constantia, New York, 1967.

2. New York State Department of Commerce, Business Fact Book, Part 2, Profile of People, Jobs and Housing, Syracuse Area, Syracuse, New York, 1974.

3. Oswego County Planning Board, Oswego County Data, Oswego, New York, 1977.

4. U. S. Department of the Interior, Geological Survey, Bulletin 68, Characteristics of New York Lakes - Part 1, Gazetteer of Lakes, Ponds and Reservoirs by Phillip E. Greeson and F. Luman Robinson, Washington, D. C., 1970.

5. Oswego County Planning Board, Wetlands of Oswego County, New York; An Inventory and Analysis, Fulton, New York, May 1973.

6. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Climatography of the United States No. 60-30, Climates of the States, New York by A. B. Pack, Silver Spring, Maryland, June 1972.

7. U. S. Army Corps of Engineers, Buffalo District, Report of Flood, Tropical Storm Agnes, June 1972: Oswego River Basin, Buffalo, New York, August 1973.

8. Federal Highway Administration, Runoff Estimates for Small Rural Watersheds, Washington, D. C., October 1977.

9. U. S. Department of Commerce, Bureau of Public Roads, Peak Rates of Runoff from Small Watersheds, Washington, D. C., 1961.

BEST DOCUMENT AVAILABLE

10. Water Resources Council, "Guidelines for Determining Flood Flow Frequency", Bulletin 17A, Washington, D. C., June 1977.

11. U. S. Department of the Interior, Geological Survey, Water-Supply Paper No. 1677, Magnitude and Frequency of Floods in the United States, Part 4. St. Lawrence River Basin by S. W. Wiitala, Washington, D. C., 1965.

12. Water Resources Council, "A Uniform Technique for Determining Flood Flow Frequency", Bulletin 15, Washington, D. C., December 1967.

13. U. S. Department of Agriculture, Soil Conservation Service, National Engineering Handbook, Section 4, Hydrology, Washington, D. C., August 1972.

14. Lockwood, Kessler and Bartlett, Inc., LKB Reservoir Routing Program, Syosset, New York, 1978.

15. Lockwood, Kessler and Bartlett, Inc., Topographic Mapping of Panther Lake, Scriba Creek, Frederick Creek, Dakins Creek and the Oneida Lake Shoreline, Town of Constantia, New York, Scale 1:4,800, Contour Interval 5 Feet, Syosset, New York, 1979.

16. Lockwood, Kessler and Bartlett, Inc., Aerial Photographs of Panther Lake, Scriba Lake, Frederick Creek, Dakins Creek and the Oneida Lake Shoreline, Town of Constantia, New York, Scale 1:4,800, Syosett, New York, 1979.

17. U. S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, October 1973.

18. U. S. Department of the Interior, Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:24,000, contour Interval 10 Feet: Camden West, New York, 1950; Mallory, New York, 1957, Contour Interval 5 Feet: Cicero, New York, 1973; Cleveland, New York, 1973; Jewell, New York, 1957.

19. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Town of West Monroe, Oswego County, New York (Unpublished).

20. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Town of Vienna, Oswego County, New York (Unpublished).

21. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Village of Cleveland, Oswego County, New York (Unpublished).

BEST DOCUMENT AVAILABLE

22. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Town of Schroppel, Oswego County, New York (Unpublished).

23. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Town of Hastings, Oswego County, New York (Unpublished).

24. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Town of Cicero, Onondaga County, New York (Unpublished).

25. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, City of Rome, Oneida County, New York (Unpublished).

26. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Town of Clay, Onondaga County, New York, Washington, D. C., April 1, 1980.

Oswego County Department of Public Works, Map of Oswego County, New York, Scale 1 inch equals 2 miles, the National Survey, Chester Vermont, 1974.

Oswego County Real Property Tax Service, Tax Map Index Map, Town of Constantia, Oswego County, New York, Scale 1:36,000, Stewart Mapping Services, Inc., San Antonio, Texas, April 14, 1977.

State of New York, Department of Transportation, 7.5-Minute Series Planimetric Maps, Scale 1:24,000, Contour Interval 10 Feet: Camden West Quadrangle; Mallory Quadrangle, second edition 1975; Panther Lake Quadrangle, second edition, 1975, Contour Interval 5 Feet: Cicero Quadrangle, 1978; Cleveland Quadrangle, 1978; Jewell Quadrangle, second edition, 1975.

U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Constantia, Oswego County, New York, Washington, D. C., June 26, 1975, Revised May 28, 1976.

U. S. Department of the Interior, Geological Survey, Hydrologic Unit Map, 1974, State of New York, Scale 1:500,000, Reston, Virginia, 1975.

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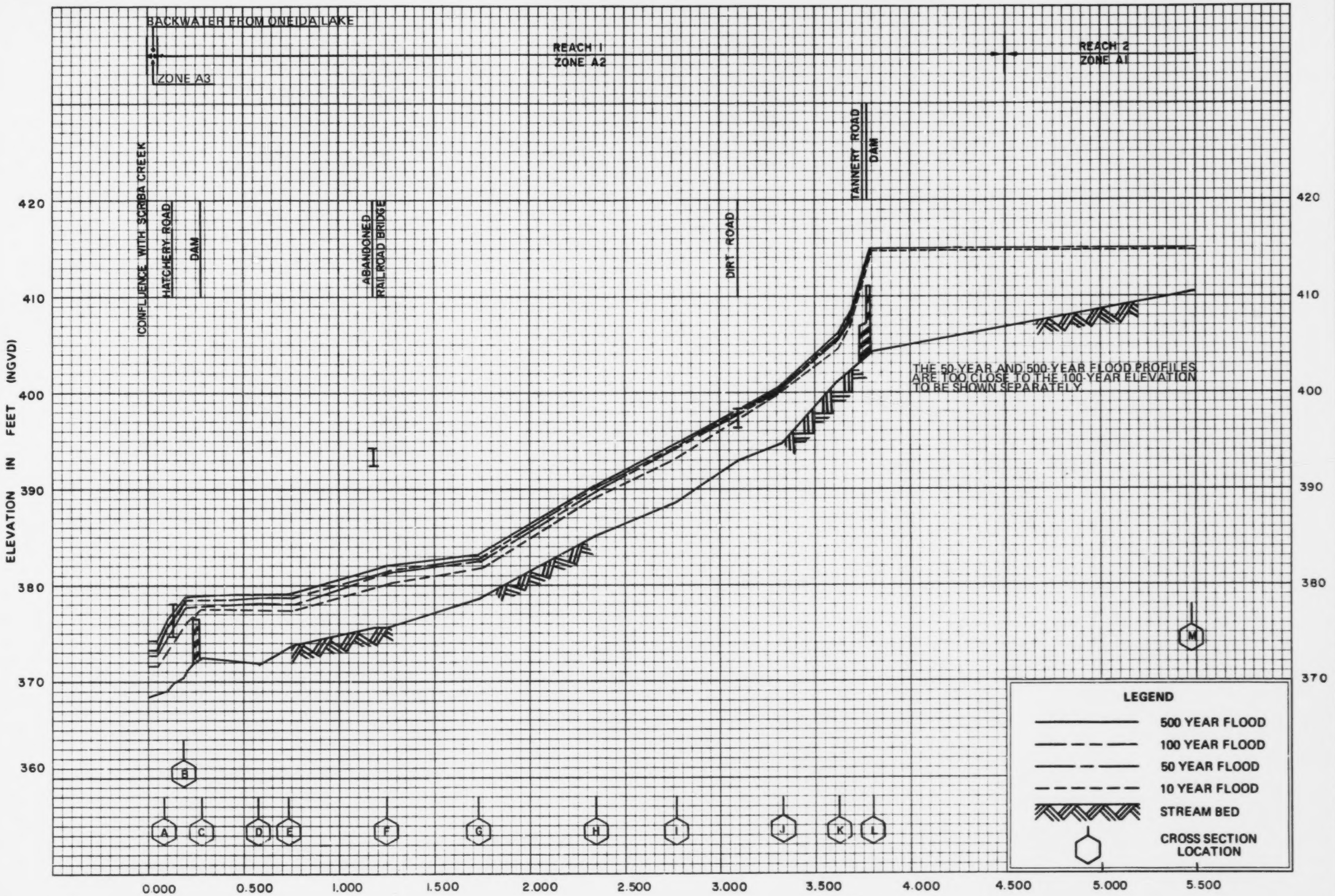

FLOOD PROFILES

FREDERICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

01P

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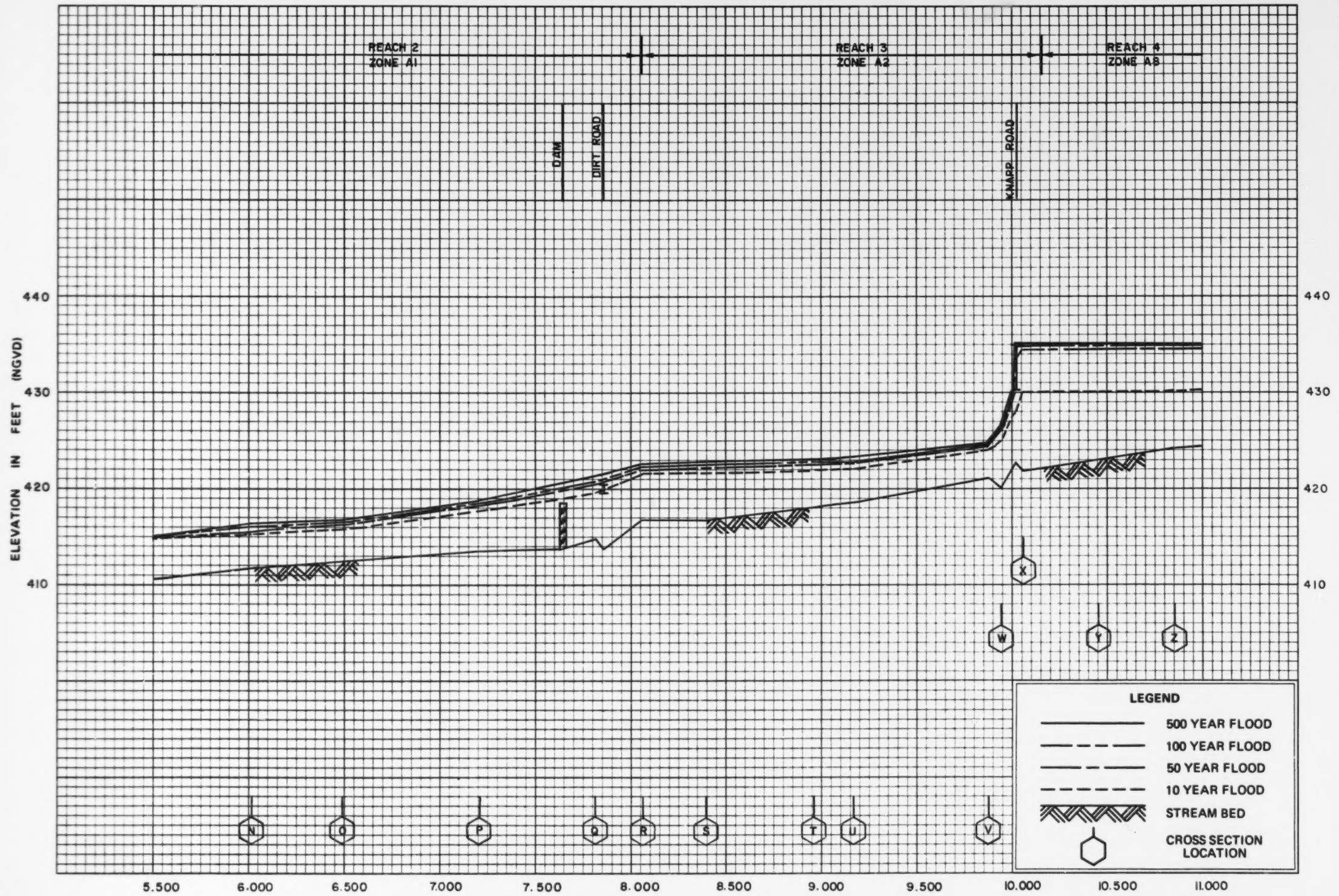

FLOOD PROFILES

FREDERICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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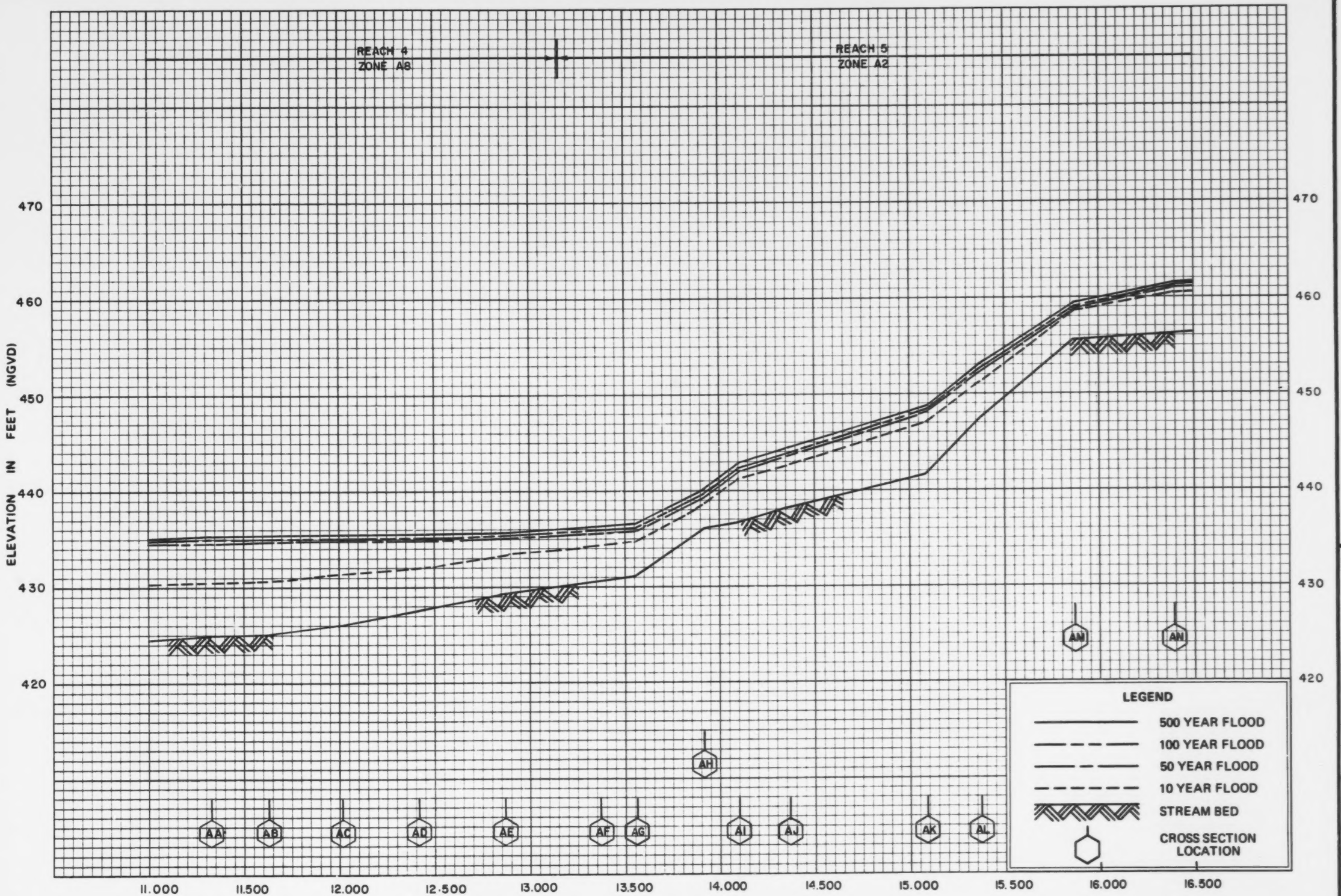

FLOOD PROFILES

FREDERICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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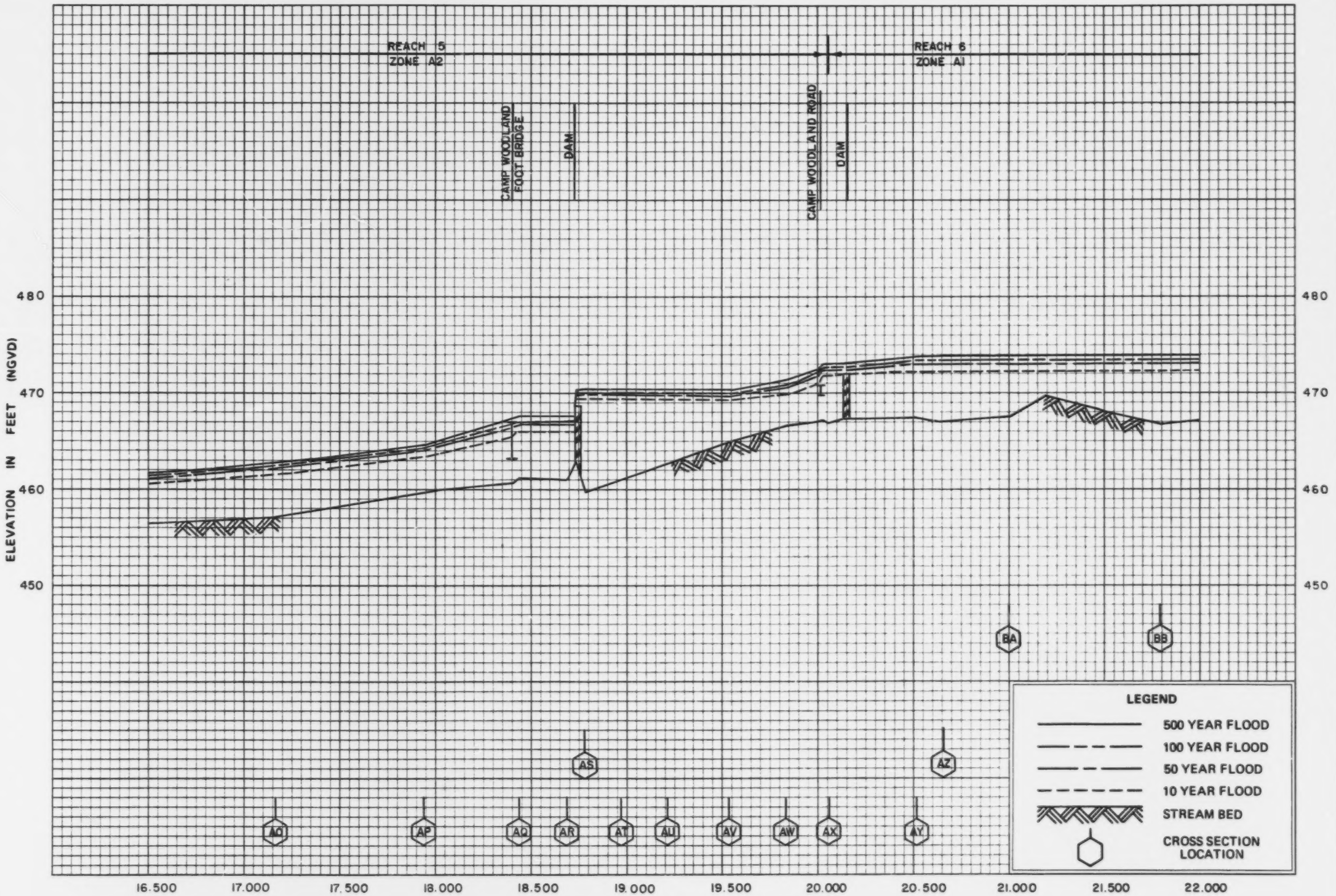

FLOOD PROFILES

FREDERICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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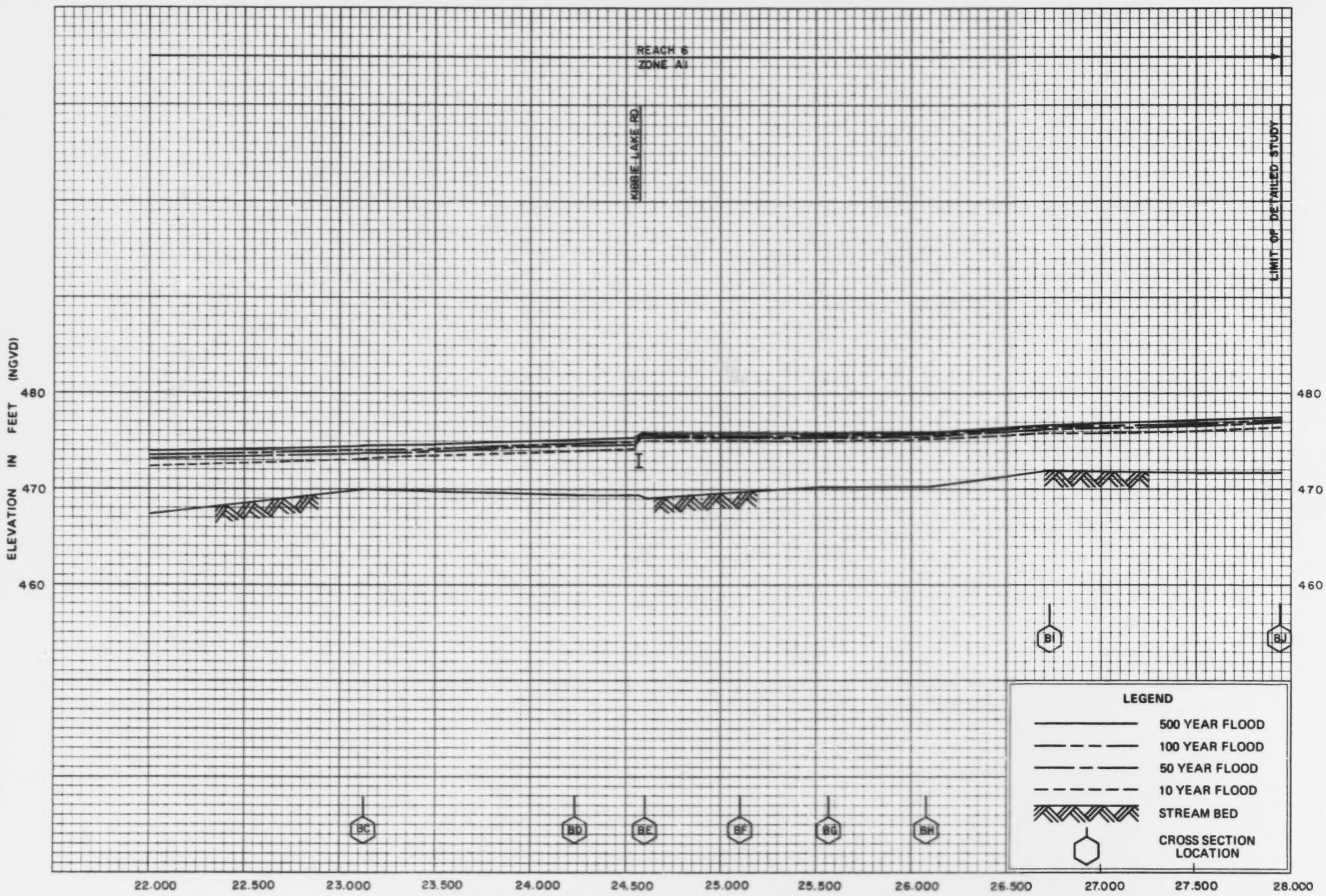

FLOOD PROFILES

FREDERICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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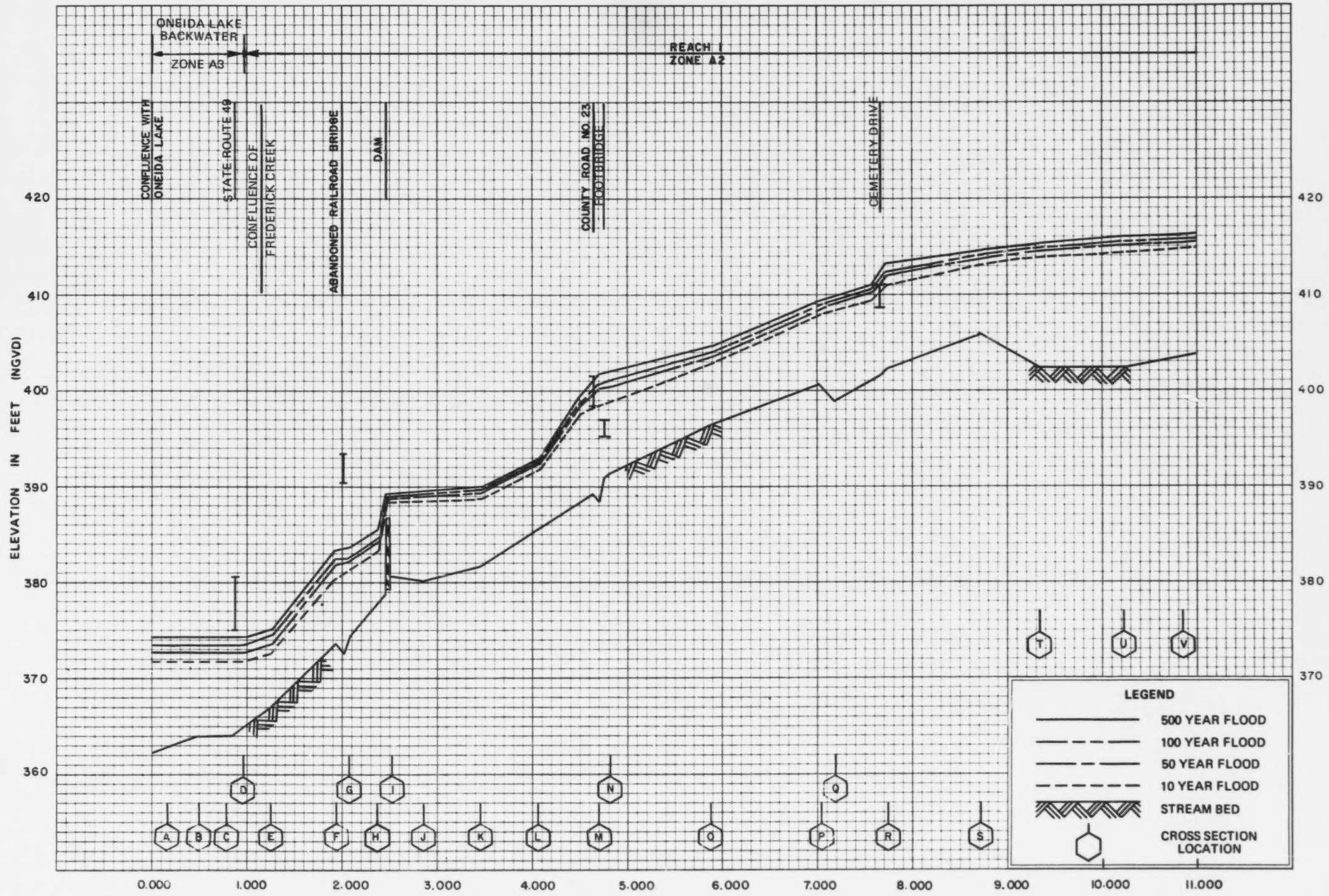

FLOOD PROFILES

SCRIBA CREEK

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TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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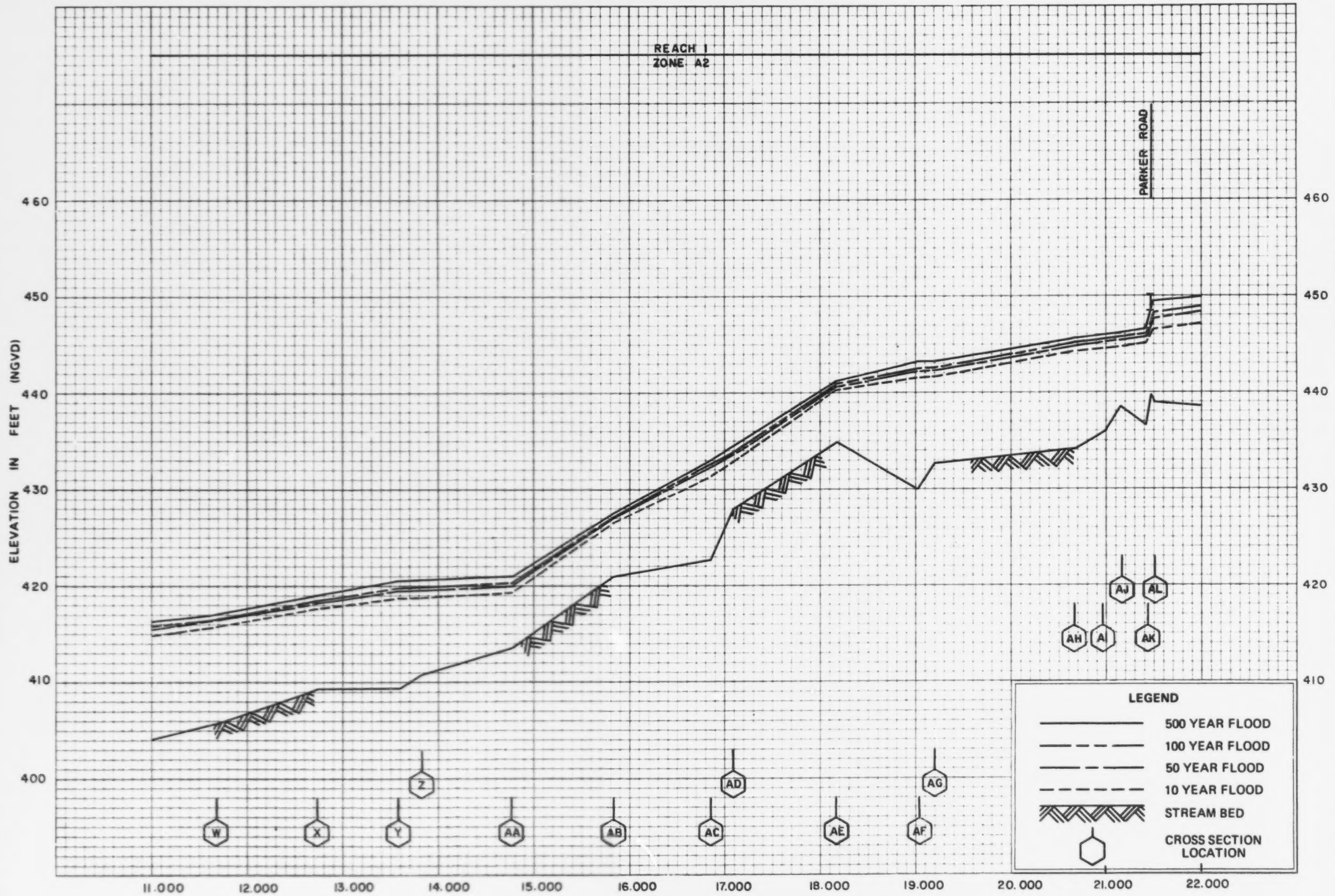

FLOOD PROFILES

SCRIBA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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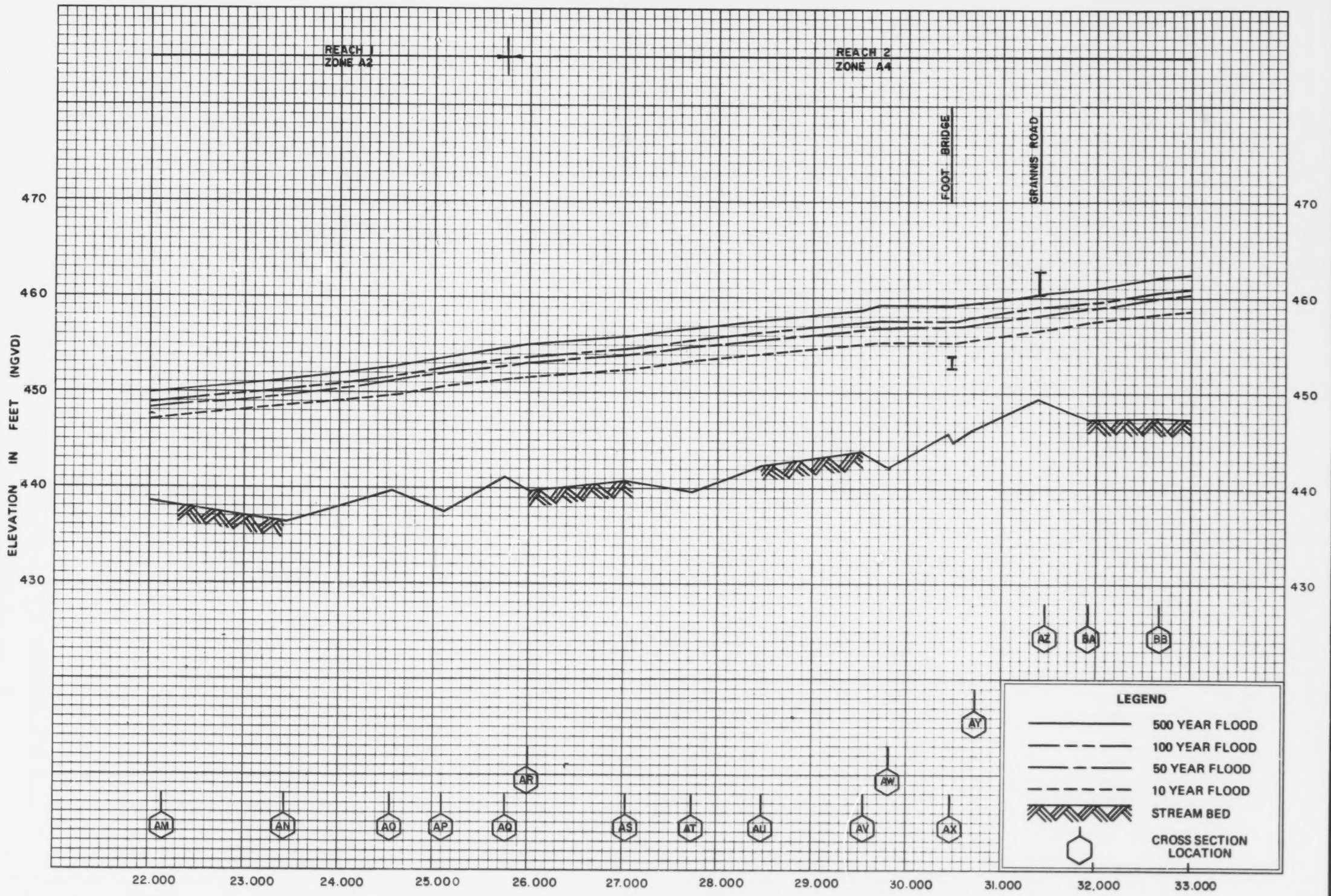

FLOOD PROFILES

SCRIBA CREEK

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TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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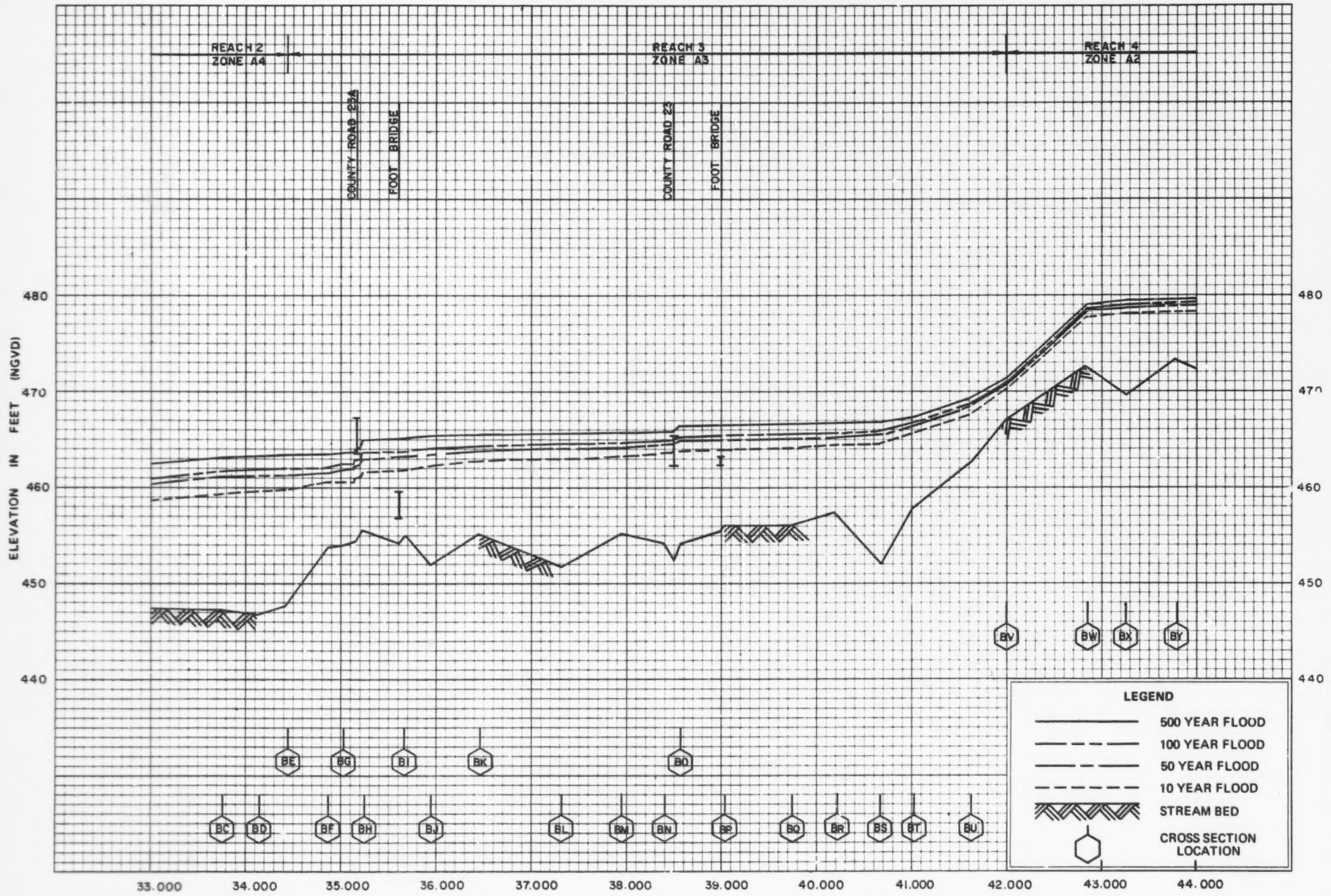

FLOOD PROFILES

SCRIBA CREEK

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TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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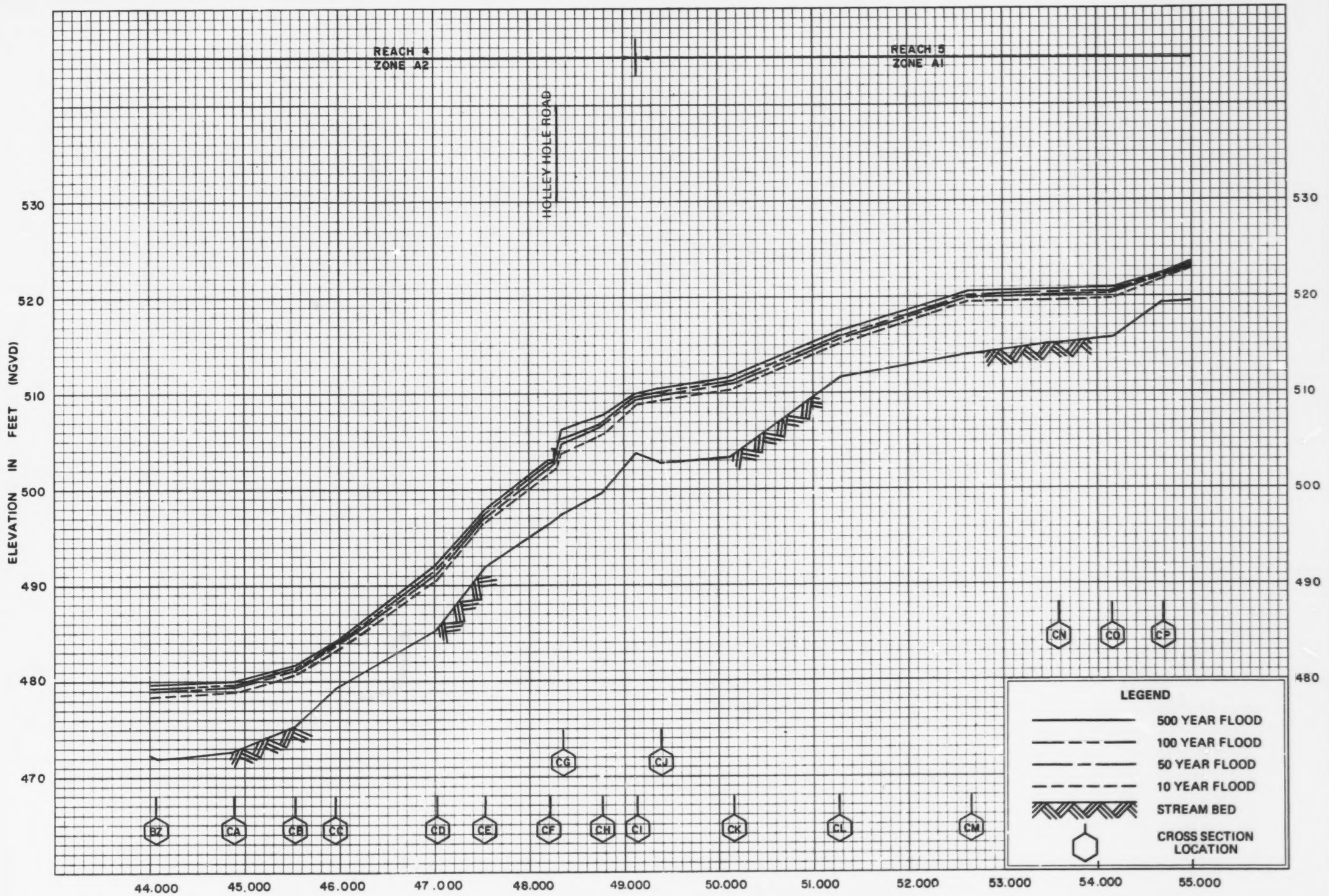

FLOOD PROFILES

SCRIBA CREEK

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TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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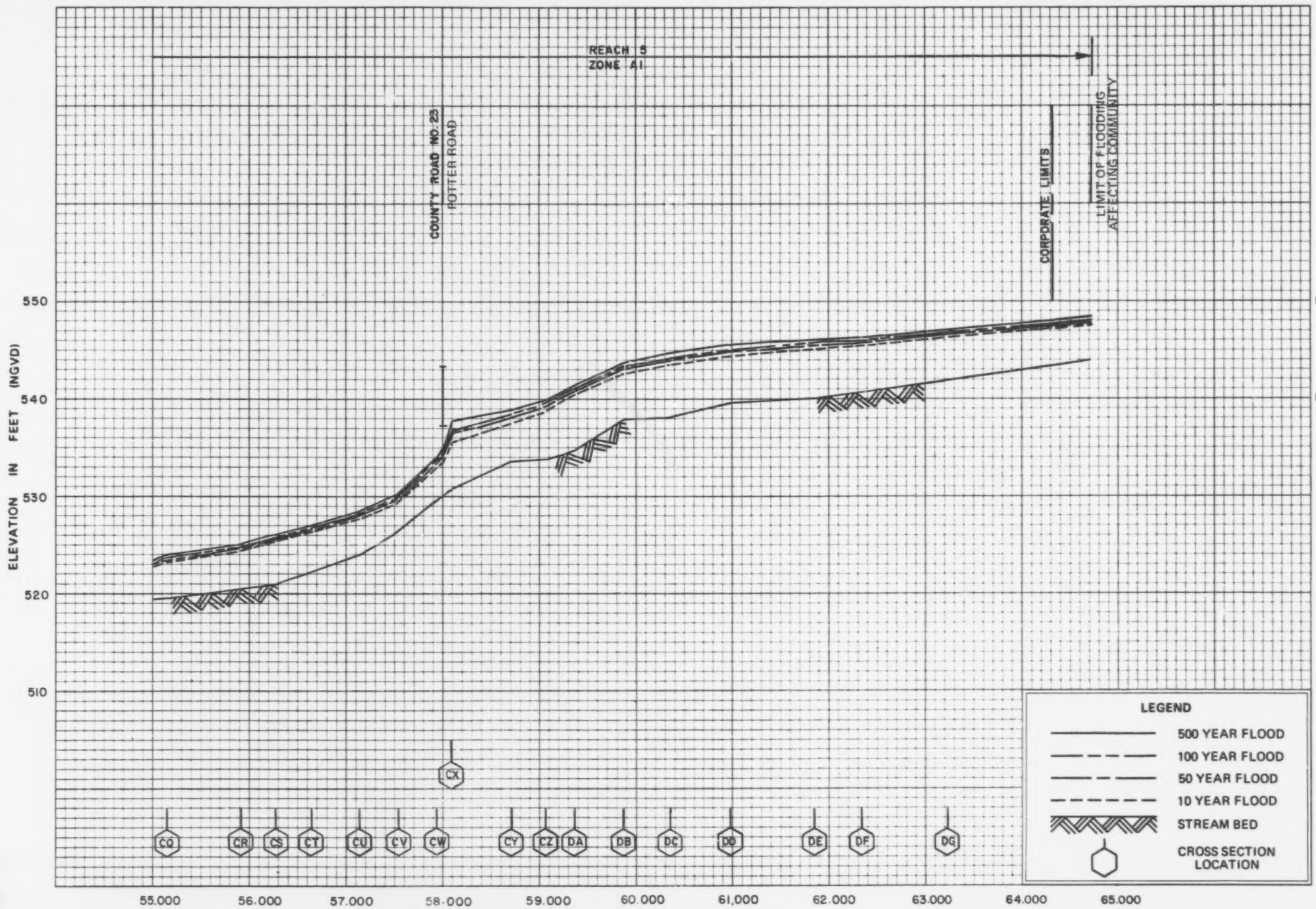

FLOOD PROFILES

SCRIBA CREEK

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TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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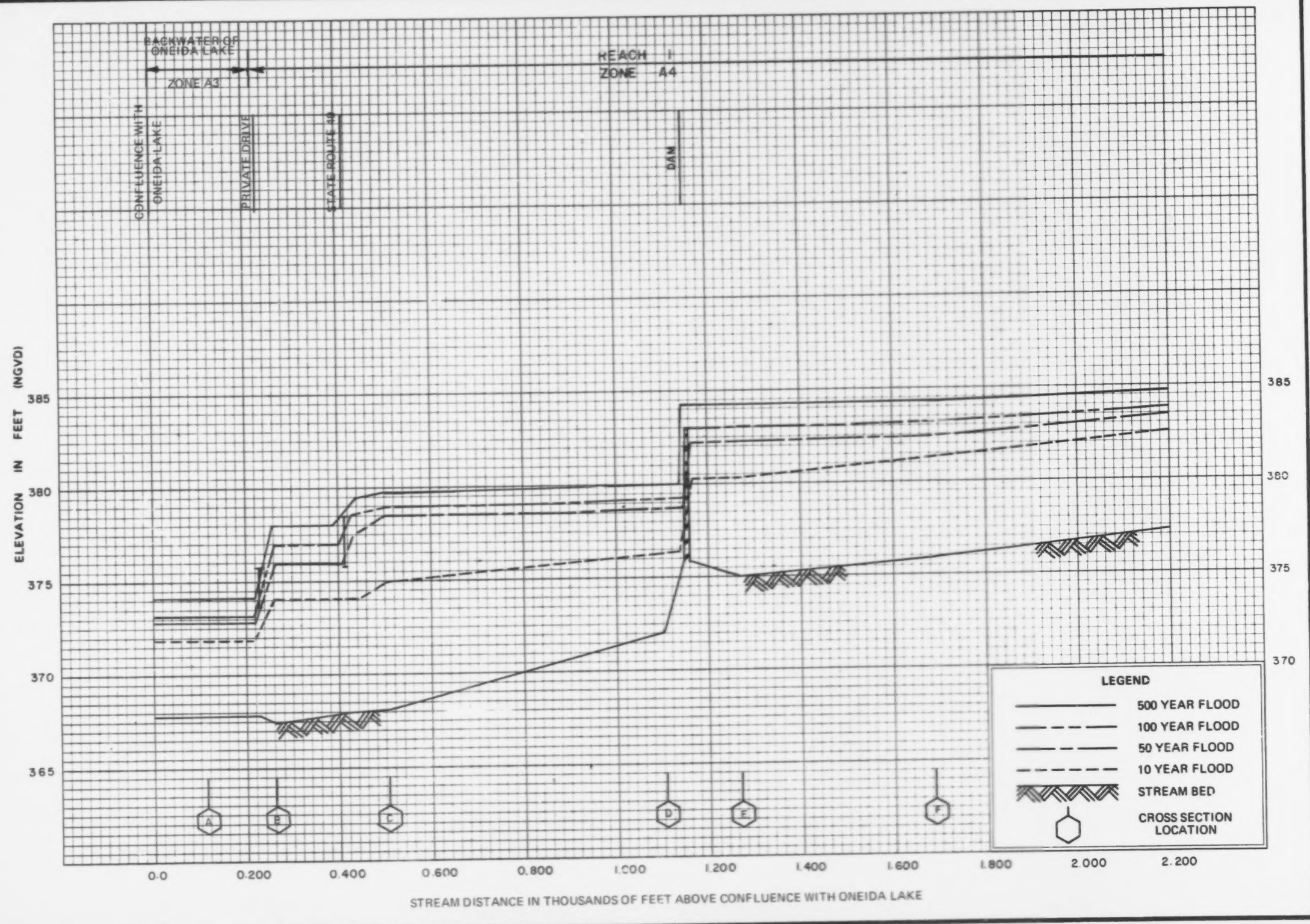

FLOOD PROFILES

DAKINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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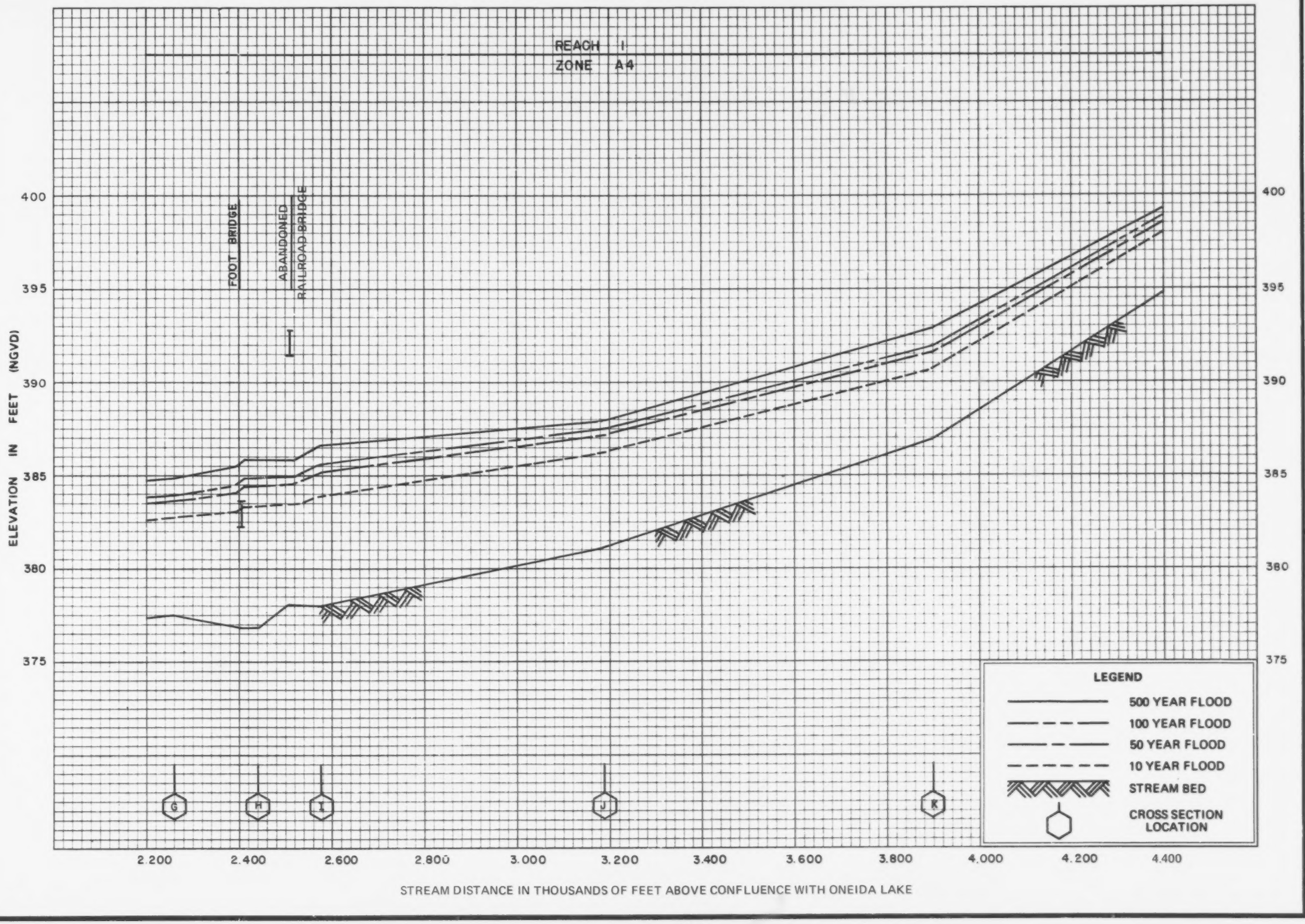

FLOOD PROFILES

DAKINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

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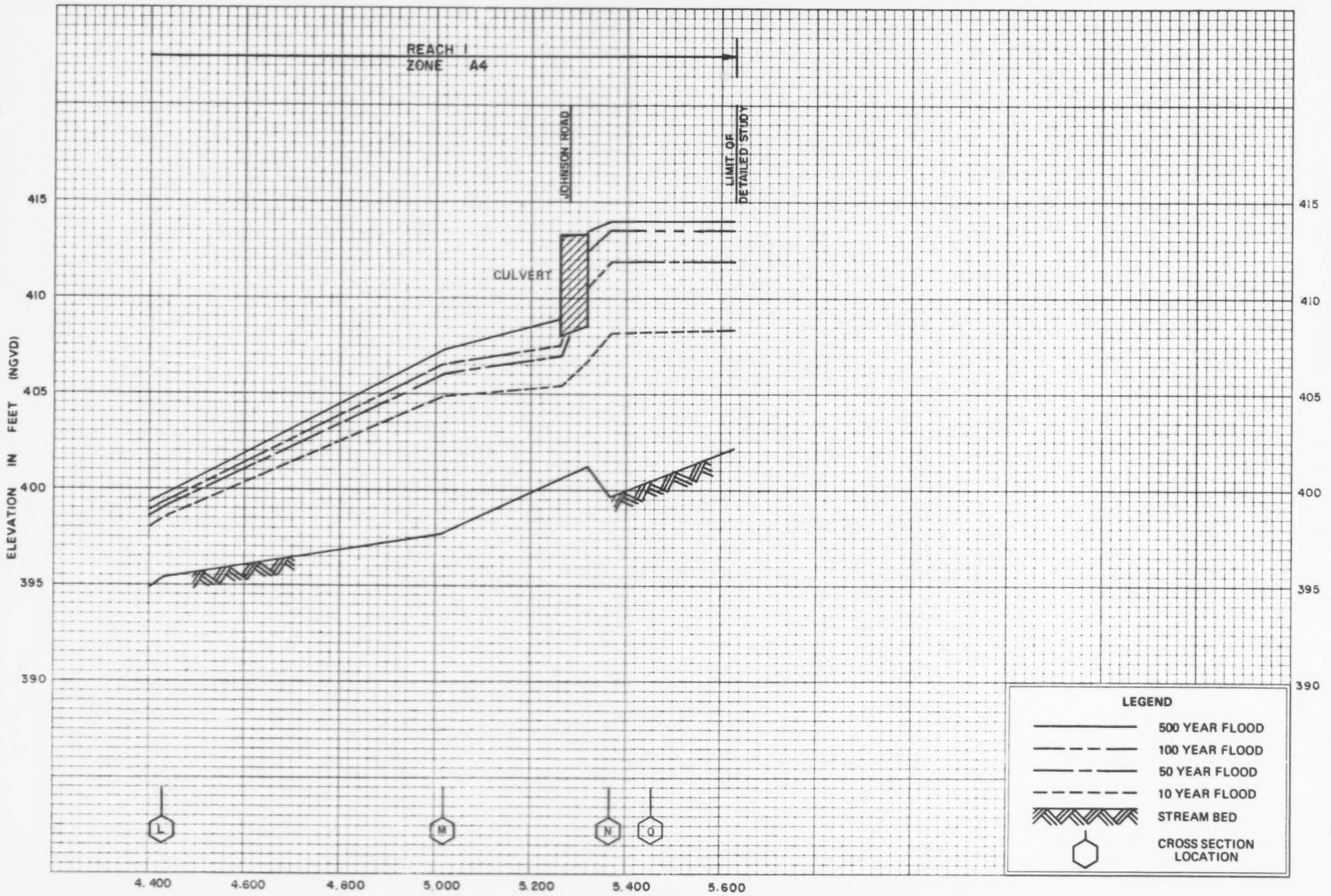

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH ONEIDA LAKE

FLOOD PROFILES

DAKINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF CONSTANTIA, NY
(OSWEGO CO.)

14P